



Figure 4.14. Terramatrix measurement locations for Glen Eden Drive bridge.

Table 4.3 lists the vertical clearance data from several sources for the Lake Wheeler Road bridge over the west-bound lanes of I-440 in Raleigh, NC. Figure 4.15 and Figure 4.16 show the locations of the specific data points in plan. This bridge has a substantial skew and both the under roadway and the bridge deck have significant super-elevation variations. It should be noted that the inspection report clearances are for the first girder for Lane 1 but for the last girder for Lane 4 and an intermediate girder at the median marking. Thus, it can be interpreted that there is reasonable correspondence between the NCDOT survey data and the inspection report values. Some of the data collected in motion had reasonable agreement with the NCDOT survey values; however, in some other cases, the reduced clearances were off substantially. It is believed that the LIDAR scans in some cases may have been associated with the underside of the deck rather than the underside of the last girder.

Table 4.3. Lake Wheeler Road Bridge Vertical Clearance Data Comparison.

Lane (Shoulder to Median)	End (west) <-----> Beginning (east)							Terra- metrix	DOT Survey	Insp. Rept.
	DOT Survey	Terra- metrix	Geo-3D							
	Vertical Clearance in Feet									
1	21.78								17.33	17.42
2	19.79	21.91	21.03	20.57	19.85	19.03	18.37	18.16	18.15	
3	19.88	22.27						19.13	18.29	
4	17.35	23.16						20.09	20.15	17.42
Median	17.52								21.12	17.00